Trend Study 00-6-01

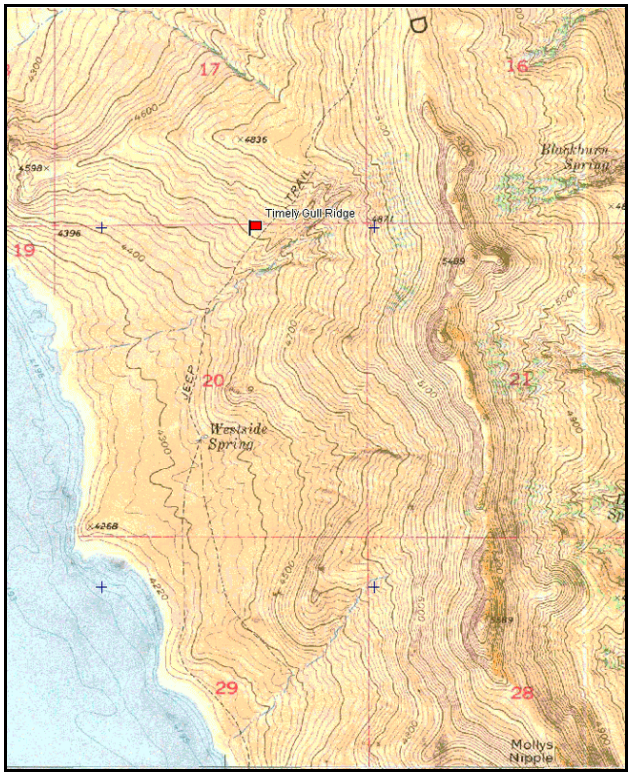
Study site name: Timely Gull Ridge . Vegetation type: Annual Grass .

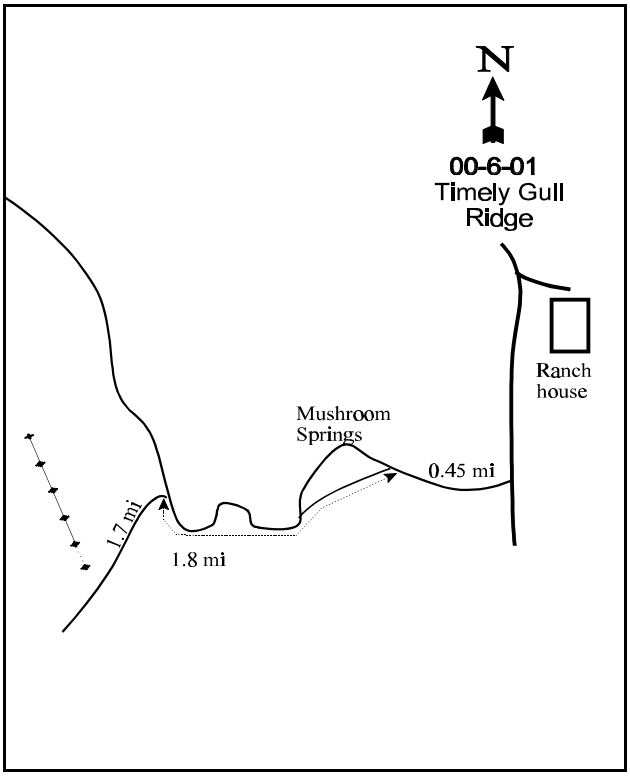
Compass bearing: frequency baseline 260 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From the Ranch House drive 0.4 miles and take a right turn. Travel 0.45 miles where the road forks. Stay left and travel 1.8 miles to another fork in the road. Stay left, from the fork travel 1.7 miles to a witness post which is 30 feet off the right hand side of the road. From the witness post walk 5 paces at a bearing of 260 degrees magnetic to the 0-foot baseline stake. The baseline runs in a direction of 260 degrees magnetic.





Map Name: Timely Gull Ridge

Diagrammatic Sketch

Township 2N , Range 3W , Section 20

UTM 4528112 N 398365 E

DISCUSSION

Trend Study No. 00-6

The Timely Gull Ridge study is located on the west side of Antelope Island about ½ mile above the shoreline. Slope is 13% with a south, southwest aspect. Elevation is approximately 4,400 feet. To the east is a large gully with scattered pinyon and juniper on the opposite slope. A moderately sized group of bison were observed near the site in 2001. A pellet group transect read in conjunction with the vegetation baseline in 2001 noted light use by both deer and bighorn sheep. Bison use was determined to be 19 days use/acre (47 days use/ha).

Soil textural analysis indicates a sandy loam with a neutral pH (6.6). Effective rooting depth was estimated at just over 18 inches, with an average soil temperature of 66°F at a depth of 17 inches. Potassium may be a limiting factor in the soil at only 6 ppm as values less than 10 ppm have been shown to affect plant growth and development. Organic matter is low at less than 1%. Vegetative cover and litter have been abundant and effective at limiting erosion on the site. Due to the extremely dry conditions prior to sampling in 2001, litter cover had decreased and bare ground slightly increased in 2001. However, litter remains well disbursed over the site as evidenced by it's high nested frequency value.

No browse species were encountered on the site in any sampling year due to short, intense, recurring fire intervals.

Cheatgrass is the dominate grass species for all years. In 1995 and 1996, cheatgrass provided 94% and 90% of the grass cover respectively. With the extremely dry conditions of 2000-2001 in Northern Utah, cheatgrass cover was greatly reduced in the 2001. Nested frequency and quadrat frequency for cheatgrass still remained high, yet sixweeks and rattail fescue both decreased in nested frequency in 2001. Perennial grasses nearly quadrupled in sum of nested frequency in 2001, due to the increase in purple three-awn. Sand dropseed also increased in nested frequency in 2001, although the increase was not significant.

Forb cover was scant in 1995 and 1996. In 2001 however, storksbill increased to more than 26% average cover. Perennial forbs are rare, with moth mullein being the dominant species.

1996 TREND ASSESSMENT

Soil trend is stable with no erosion apparent in 1996. Although vegetation cover declined slightly, litter cover increased leaving little bare ground. Cheatgrass, rattail fescue and six weeks fescue are the dominate herbaceous species providing the bulk of the vegetative cover. Even if fire is suppressed on the site, it will be extremely difficult to change the composition of the community. Herbaceous trend is stable at this time but with a very poor composition.

TREND ASSESSMENT
soil - stable (3)
browse - n/a
herbaceous understory - stable but with very poor composition (3)

2001 TREND ASSESSMENT

Trend for soil is stable. Litter cover decreased in 2001 due to the dry conditions, but litter is still well disbursed over the site as evidenced by it's high nested frequency value. Vegetation cover remains high and erosion is minimal. Browse remains non-existent and will likely never play an important role on this site. Trend for the herbaceous understory is slightly up. Sum of nested frequency of annual grasses decreased and the most abundant perennials, purple three-awn and sand dropseed both increased in nested frequency. Storksbill increased in both cover and frequency in 2001. The increases in perennial grasses are encouraging.

TREND ASSESSMENT
soil - stable (3)
browse - n/a
herbaceous understory - slightly up (4)

HERBACEOUS TRENDS --
Herd unit 00 , Study no: 6

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %		
		'95	'96	'01	'95	'96	'01	'95	'96	'01
G	Aristida purpurea	$_{a}$25	$_{a}$11	$_{b}$142	10	5	58	.32	.12	4.08
G	Bromus tectorum (a)	$_{b}$499	$_{b}$499	$_{a}$471	100	100	100	61.79	63.37	13.82
G	Festuca myuros (a)	$_{a}$75	$_{b}$163	$_{b}$135	21	51	52	.69	3.75	.56
G	Poa fendleriana	3	-	-	2	-	-	.01	-	-
G	Sporobolus cryptandrus	55	47	67	26	27	36	.88	1.51	1.22
G	Vulpia octoflora (a)	$_{c}$344	$_{b}$257	$_{a}$66	83	68	24	1.99	1.85	.34
Total for Annual Grasses		918	919	672	204	219	176	64.47	68.98	14.72
Total for Perennial Grasses		83	58	209	38	32	94	1.21	1.63	5.31
Total for Grasses		1001	977	881	242	251	270	65.68	70.62	20.03
F	Agoseris heterophylla	8	-	-	4	-	-	.02	-	-
F	Calochortus nuttallii	-	-	3	-	-	2	-	-	.01
F	Draba nemorosa (a)	12	23	24	3	6	8	.01	.03	.04
F	Erodium cicutarium (a)	$_{b}$430	$_{a}$342	$_{c}$456	100	94	96	3.79	2.78	26.70
F	Tragopogon dubius	-	1	-	-	1	-	-	.00	-
F	Verbascum blattaria	$_{a}$-	$_{b}$29	$_{c}$94	-	12	38	-	1.58	8.14
Total for Annual Forbs		442	365	480	103	100	104	3.80	2.81	26.74
Total for Perennial Forbs		8	30	97	4	13	40	0.01	1.59	8.15
Total for Forbs		450	395	577	107	113	144	3.82	4.41	34.90

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BASIC COVER --
Herd unit 00 , Study no: 6

Cover Type	Nested Frequency			Average Cover %		
	'95	'96	'01	'95	'96	'01
Vegetation	500	500	491	73.59	68.52	56.05
Rock	269	36	4	2.95	.18	.03
Pavement	-	131	385	0	1.54	10.95
Litter	500	495	465	66.70	79.70	32.95
Cryptogams	51	20	-	.52	.35	0
Bare Ground	40	11	160	.12	.05	1.85

SOIL ANALYSIS DATA --
Herd Unit 00, Study no: 06, Timely Gull Ridge

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
18.2	65.8 (16.5)	6.6	76.9	10.1	13.0	.9	6.0	89.6	.4

PELLET GROUP FREQUENCY --
Herd unit 00 , Study no: 6

Type	Quadrat Frequency		
	'95	'96	'01
Bighorn Sheep	-	-	2
Deer	-	-	5
Bison	1	1	8

Pellet Transect	
Pellet Groups per Acre	Days Use per Acre (ha)
01	01
26	N/A
70	5 (13)
226	19 (47)